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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/780,632	02/09/2001	Surinder M. Maini	HT-3765 US NA	9350

23906 7590 01/11/2006

E I DU PONT DE NEMOURS AND COMPANY  
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BARLEY MILL PLAZA 25/1128  
4417 LANCASTER PIKE  
WILMINGTON, DE 19805

EXAMINER

BOYD, JENNIFER A

ART UNIT PAPER NUMBER

1771

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/780,632

Applicant(s)

MAINI, SURINDER M.

Examiner

Jennifer A. Boyd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 10-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

~~SECRET~~

2. The Applicant's Remarks, filed November 1, 2005, have been entered and have been carefully considered. Claims 10 – 18 are pending. In view of Applicant's argument that there is insufficient basis in Kolmes to suggest the claimed limitation of random entangled loops, much less the desirability and the reasonable expectation of success of combining such loops with Behnke and Barbeau, the Examiner withdraws the rejection of claims 10 – 18 as detailed in the

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previous Office Action. After an updated search, additional prior art has been found which renders the invention as currently claimed unpatentable for reasons herein below.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 103***

4. Claim 10 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gurian (US 5,856,005) in view of Behnke et al. (US 4,120,914).

Gurian is directed to a permanently anti-microbial and flame-retardant yarn and fabric made therefrom (Title).

As to claim 10, Gurian teaches a woven fabric comprising yarns having a boucle-like sheath formed by a plurality of substantially randomly extending permanently flame-retardant filaments and anti-microbial filaments (columns 3 – 4). See Figure 1 for the yarn structure. The Examiner equates the yarn structure to Applicant's "random entangled loop structure". Although Gurian teaches that flame-retardant polyester filaments are the preferred flame retardant filaments, Gurian notes that certainly other flame-retardant filaments capable of providing a fabric with the desired amount of flame-retardancy may be used instead (column 4, lines 30 – 40). Gurian teaches that the fabric according the invention has the ability to pass both flame-retardancy and anti-microbial tests (column 5, lines 1 – 10).

As to claims 12 – 13, Gurian teaches in the Example the use of a yarn having a 440 denier.

Gurian teaches the claimed invention above but fails to teach that the flame-retardant component of the yarn comprises 10 – 90% by weight para-aramid and 90 – 10% by weight of meta-aramid as required by claim 10. Gurian fails to teach that the para-aramid filaments are poly(paraphenylene terephthalamide) as required by claims 16 and 18 and the meta-aramid filaments are poly(metaphenylene terephthalamide) as required by claims 17 and 18. Gurian fails to teach that the para-aramid filaments are present in the amount of 50% and the meta-aramid filaments are present in the amount of 50% as required by claim 18. Gurian fails to teach that the woven fabric is a plain weave as required by claim 14 and the woven fabric is a twill weave as required by claim 15.

Behnke is directed to aromatic polyamide fiber blends for protective clothing such as protection for extreme temperature conditions such as that provided by exposure to burning fuel (Title and column 1, lines 15 – 30). Behnke teaches an intimate blend of aromatic polyamide staple fiber components comprising 45 – 55 weight percent poly(m-phenylene isophthalamide) fibers and 45 – 55 weight percent poly(p-phenylene terephthalamide) fibers (Abstract). The Examiner equates the poly(m-phenylene isophthalamide) fibers to Applicant's "meta-aramid" and the poly(p-phenylene terephthalamide) to Applicant's "para-aramid". It should be noted that yarns comprising 45 – 55 weight percent poly(m-phenylene isophthalamide) fibers and 45 – 55 weight percent poly(p-phenylene terephthalamide) fibers meet Applicant's weight percentage requirements of claim 18. Additionally, Behnke provides an example of a 50/50 blend (column 6, lines 50 – 55). Behnke teaches that the appropriate proportions of the aromatic polyamide staple components are blended and spun into yarns and woven into fabrics (column 6, lines 29 –

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35). Behnke teaches that the woven fabric can have a plain weave construction or a twill weave construction (column 6, lines 55 – 65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use 45 – 55 percent by weight of meta-aramid fibers, in particular poly(m-phenylene isophthalamide), and 45 – 55 percent by weight of para-aramid, in particular poly(p-phenylene terephthalamide) fibers as suggested by Behnke in place of the flame resistant polyester fibers of Gurian motivated by the desire to expand the range of end-uses of the flame-retardant fabric. It should be noted that Gurian suggests that other fibers may be used in place of the flame-retardant polyester filaments as long as they possess a suitable level of flame-retardancy.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to create the woven fabric of Gurian with a plain weave or twill weave as suggested by Behnke motivated by the desire to create a fabric with certain physical and structural properties based on desired use.

As to claims 10 – 11, although Gurian in view of Behnke does not explicitly teach the claimed yarn having random entangled loop structure wherein the weight per length of the yarn is 3 – 25% higher as required by claim 10 or 10 – 18% higher as required by claim 11 than continuous filament yarn having the same composition but no entanglement or loops, it is reasonable to presume that the yarn with a random entangled loop structure would inherently have a weight per length have a weight per length that is 3 - 25% higher as required by claim 10 or 10 – 18% higher as required by claim 11 compared to a continuous filament yarn having the

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same composition but no entanglements or loops. Support for said presumption is found in the use of like materials (i.e. a yarn of para-aramid and meta-aramid filaments having a random entangled loop structure) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property would obviously have been present once the Behnke in view of Barbeau and Kolmes product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

### ***Response to Arguments***

5. Applicant's arguments with respect to the previous rejection have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Boyd whose telephone number is 571-272-1473. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in cursive script, appearing to read "Jennifer Boyd".

Jennifer Boyd  
January 5, 2006